

Detailed Action

1. This Office Action is submitted in response to the preliminary amendment filed 10-11-2006, wherein claims 1,3,6-10,12,14-16,22-26,28,30,32,33,35, and 37 have been amended and claim 4 has been canceled. Claims 1-3, and 5-39 are pending.

Examiners Amendment

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Monique Morneault on 1-5-2007. Changes made below in the form of additions are underlined, and changes in the form of deletions are enclosed in brackets [].

The Claims are amended as follows;

-- 1. (Currently amended) An integrated mass spectrometer device formed from two multilayer wafers, each wafer having a first layer, second layer and having an insulating layer provided therebetween, the device having a plurality of electrode rods and a plurality of planar electrodes, the electrodes being formed in the first layer and electrode rods being provided in the second layer, the second layer being dimensioned to receive the electrode rods, the rods being retained in contact with the second layer by the provision of at least one [resilient member] silicon spring formed in the second layer. --

-- 32. (Currently amended) A mass spectrometer array comprising a plurality of devices, each device being an integrated mass spectrometer device formed from two multilayer wafers, each wafer having a first layer, a second layer and having an insulating layer provided therebetween, the device having a plurality of electrode rods and a plurality of planar electrodes, the electrodes being formed in the first layer and electrode rods being provided in the second layer, the second layer being dimensioned to receive the electrode rods, the rods being retained in contact with the second layer by the provision of at least one [resilient member] silicon spring formed in the second layer. --

-- 35. (Currently amended) A method of forming a mass spectrometer comprising the steps of:

a) providing a first and second wafer, each wafer having at least three layers, a first layer, a second layer and an insulating layer provided therebetween,

b) on each wafer, etching an inner and outer pattern on the first and second layers respectively, the inner and outer patterns defining components for the spectrometer, the first layer of each wafer having at least one electrode formed thereon, the second layer of each wafer being dimensioned to receive at least one electrode rod, the second layer having at least one [resilient member] silicon spring formed therein the at least one [resilient member] silicon spring being adapted to retain a rod in contact with the second layer

c) subsequently bonding the two patterned wafers together so as to form a multilayer stack

d) inserting at least one electrode rod into the second layer of each wafer of the device. --

Claim 5 is cancelled

Allowable Subject Matter

3. Claims 1-3, and 6-39 are allowed

Examiner's statement of reasons for allowance

The following is an examiner's statement of reasons for allowance:

4. Claims 1,32, and 35 are allowed because prior art fails to show a miniaturized mass spectrometer formed from two multilayered wafers having a plurality of electrode rods and planar electrodes where the electrode rods are retained in contact with the second layer of one wafer by at least one silicon spring formed in the wafers second layer.

It is noted herein that the prior art discloses the use of electrode rods in miniaturized mass spectrometers formed from two multilayered wafers (USPN

6,465,792 to Baptist; USPN 5,386,115 to Friedhoff et al), and the prior art discloses the use of silicon springs for providing resilient contact structures for microelectronic components (USPN 6,422,831 to Khandros). However, there is no motivation to combine these teachings.

5. Claims 2,3,6-31,33,34, and 36-39 are allowed by virtue of their dependency upon allowed claims 1,32, and 35.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. Any inquiry concerning this communication or earlier communications should be directed to Phillip Johnston whose telephone number is (571) 272-2475. The examiner can normally be reached on Monday-Friday from 6:30 am to 3:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor Drew Dunn can be reached at (571) 272-2312. The fax phone number for the organization where the application or proceeding is assigned is 571 273 8300.

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Status information for unpublished applications is available through Private PAIR only.

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PJ
January 3, 2007